



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

**Subject: Electrical Equipment
and Installations**

Date: DRAFT

AC No: 25.1353-1X

Initiated By: ANM-110 Change:

1. PURPOSE.

a. This Advisory Circular (AC) describes an acceptable means for showing compliance with the requirements of § 25.1353(a), “Electrical Installation,” and § 25.1353(c)(6) “Nickel Cadmium Battery Installation,” of Title 14, Code of Federal Regulations (CFR) part 25, commonly referred to as part 25 of the Federal Aviation Regulations (FAR). Part 25 contains the airworthiness standards applicable to transport category airplanes. The means of compliance described in this document provides guidance to supplement the engineering and operational judgment that must form the basis of any compliance findings relative to electrical installation and nickel cadmium battery installation.

b. The guidance provided in this document is directed to airplane manufacturers, modifiers, foreign regulatory authorities, and Federal Aviation Administration transport airplane type certification engineers and their designees.

c. As of the issuance date, the guidance provided in this AC is harmonized with that of the European Joint Aviation Authorities (JAA). It provides a method of compliance that both the FAA and JAA have found acceptable.

d. Like all advisory circular material, this AC is not, in itself, mandatory, and does not constitute a regulation. It describes an acceptable means, but not the only means, for demonstrating compliance with the requirements for transport category airplanes. Terms such as “shall” and “must” are used only in the sense of ensuring applicability of this particular method of compliance when the acceptable method of compliance described in this document is used. While these guidelines are not mandatory, they are derived from extensive Federal Aviation Administration and industry experience in determining compliance with the relevant regulations.

e. This advisory circular does not change, create any additional, authorize changes in, or permit deviations from, regulatory requirements.

2. BACKGROUND.

a. Effective February 1, 1965, part 25 was added to 14 CFR to replace Part 4b of the Civil Air Regulations (CAR). Sections 4b.625 and 4b.625-1 of the CAR, became § 25.1353 of 14 CFR for electrical equipment and installations.

3. DISCUSSION AND DEMONSTRATION OF COMPLIANCE. Applicants may show compliance with the requirements § 25.1353(a) by considering the following sources of interference:

- a. Conducted and radiated interference caused by electrical noise generation from apparatus connected to the busbars,
- b. Coupling between electrical cables or between cables and aerial feeders,
- c. Malfunctioning of electrically-powered apparatus,
- d. Parasitic currents and voltages in the electrical distribution and earth systems, including the affects of lightning currents or static discharge,
- e. Difference frequencies between generating or other systems, and
- f. The requirements of § 25.1309 should also be satisfied.

4. DISCUSSION AND DEMONSTRATION OF COMPLIANCE. Applicants may show compliance with the requirements § 25.1353(c)(6)(ii) and (iii) by demonstrating the following:

- a. Where temperature sensing and over-temperature warning devices are installed to comply with § 25.1353(c)(6)(ii) or (iii), their correct operations should be verified at agreed maintenance intervals in addition to compliance with § 25.1309(a) and (b).

SIGNATURE